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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,119	02/27/2004	Jae-Yoel Kim	678-1367	7609

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EXAMINER	
HEIBER, SHANTELL LAKETA	
ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/789,119	KIM ET AL.	
	Examiner	Art Unit	
	SHANTELL HEIBER	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,4,6,7,11,13,15 and 16* is/are allowed.

6)☒ Claim(s) *1,3,5,9,10,12,14 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/27/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3, 10 and 12 have been considered but are moot in view of the new ground(s) of rejection.

The combination of Crawford et al., Kliger et al. and Applicant's Acknowledged Prior Art (APA) discloses all limitations as set forth in Claims 1, 3, 10 and 12.

Allowable Subject Matter

2. Claims 6, 7, 9, 15, 16 and 18 are allowed.

3. The following is an examiner's statement of reasons for allowance: The present invention is drawn to an apparatus and method for transmitting/receiving preamble in ultra wideband communication system. The closet prior art of record Crawford et al., U.S. Publication No. 2003/0002471 discloses a method for estimating carrier-to-noise-plus-interference ration (CNIR) for OFDM waveforms and the use thereof for diversity antenna branch selection. The closet prior art further discloses a communication burst made up of a plurality of transmit symbols is transmitted within each frame. Each frame structure includes a preamble portion 204 that is typically used for timing synchronization and channel estimation. The preamble portion 204 includes a short symbol portion 306 and a long symbol portion 308 (first and second preambles). The short symbol portion 306 is used for timing synchronization and the long symbol portion 308 is used for channel estimation; [0052]-[0054], [0060], [0069] and [0070]. The prior art fails to disclose wherein the first preamble is an aperiodic sequence, preferably, an ARM (Aperiodic Recursive Multiplex) sequence.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Claims 2, 4, 11 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 3, 5, 10, 12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford et al. (Crawford), U.S. Publication No. 2003/0002471 in view of Kliger et al. (Kliger), U.S. Publication No. 2003/0066082 in further view of Applicant's Acknowledged Prior Art (APA).

Regarding Claims 1, 3, 10 and 12, Crawford discloses an apparatus and method for transmitting a preamble in a communication system, which comprises: a first preamble generator for generating a first preamble for synchronization using a sequence; a second preamble generator for generating a second preamble for channel

estimation using the sequence; and a transmitter for multiplexing the first and second preambles. **(A communication burst made up of a plurality of transmit symbols is transmitted within each frame. Each frame structure includes a preamble portion 204 that is typically used for timing synchronization and channel estimation. The preamble portion 204 includes a short symbol portion 306 and a long symbol portion 308 (first and second preambles). The short symbol portion 306 is used for timing synchronization and the long symbol portion 308 is used for channel estimation; [0052]-[0054], [0060], [0069] and [0070]).**

Crawford fails to disclose aperiodic sequence and transmitting the multiplexed preambles as a preamble of the UWB communication system.

In a similar field of endeavor, Kliger discloses a home network system and method. Kliger further discloses aperiodic sequence **[0114] and [0120]**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to meet the demand for interconnectivity (Kliger) in a system estimating carrier-to-noise-plus-interference ratio (CNIR) and the use thereof for diversity antenna branch selection (Crawford).

Crawford and Kliger fail to disclose transmitting the multiplexed preambles as a preamble of the UWB communication system.

However, applicant's APA discloses transmitting the multiplexed preambles as a preamble of the UWB communication system **(Figures 1-3 refer to a UWB system that has two structures, a first frame structure (preamble 200) and a second frame structure (preamble 300))**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to meet the demand for interconnectivity (Kliger) in a system estimating carrier-to-noise-plus-interference ratio (CNIR) and the use thereof for diversity antenna branch selection (Crawford) for further, using preambles at the beginning of data frames in various types of well known communication systems.

Regarding Claims 5, 14 and 18, Crawford, Kliger and APA discloses wherein said periodic sequence is a CAZAC (Constant Amplitude Zero Auto Correlation) sequence **(A CAZAC sequence for generating preambles are suggested in UWB communication systems; APA-[0063])**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shantell Heiber whose telephone number is 571-272-0886. The examiner can normally be reached on Monday-Friday 7:00am-3:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273 8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. H./
Examiner, Art Unit 2617
June 26, 2008

/Lester Kincaid/

Supervisory Patent Examiner, Art Unit 2617